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Physical fitness and the effectiveness of high school principals as perceived by superintendents

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PHYSICAL FITNESS AND THE EFFECTIVENESS OF HIGH SCHOOL PRINCIPALS AS PERCEIVED BY SUPERINTENDENTS

by

Michael Caraway Allred

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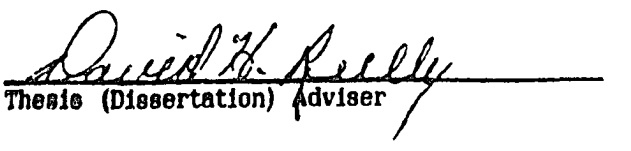

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The purpose of this research was to determine effort of physical fitness on the leadership effectiveness of high school principals. Two hundred seventeen high school principals were surveyed to find out their level of physical fitness, with 123 responding. The principals' leadership effectiveness was then evaluated by their superintendents. The physically fit principals' leadership scores were then compared with the leadership scores of the physically unfit principals.

A t-test showed that principals who were physically fit were significantly more effective leaders than principals who were not physically fit. An ANOVA also revealed that the difference between the leadership effectiveness of the two groups was significiant at the .05 level.

The fit leaders exercised 7.72 times per week and the unfit leaders exercised .11 times per week. Sixty-six per cent of the principals excercised at least three times a week, while 21 percent did no exercise at all. Most of the principals who exercised did some form of aerobic exercise, while only 33 per cent did any strength training. Eleven of the principals who returned the leadership instrument asked not to be evaluated on their leadership.

ACKNOWLEDGEMENTS

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CHAPTER I

INTRODUCTION

Overview

This study is about leadership, physical fitness, and the high school principal. The purposes are to determine: (1) how physically fit the high school principals of North Carolina are and (2) if physically fit principals are more effective leaders than principals who are not fit.

The problem of finding out if principals are fit is a pretty straight forward issue, since fitness is not a gift, but something that is obtained through hard work. Fitness has three elements: aerobic fitness, muscular strength, and flexibility. Aerobic fitness comes from walking, running, swimming, or biking; muscular strength comes from isotonic exercise; and flexibility comes from stretching.

Measuring effectiveness of principals is another issue, however. This task involves defining criteria that would validly evaluate the performance of a principal. Areas such as communication, innovation, discipline, and administrative visibility will be used to rate the effectiveness of principals. These criteria are reported in the literature as factors associated with high school principals and leadership.

The principal is definitely a leader, and Decicco says that the effective high school principal will need "courage,

persistence, and strength to be an effective principal."[1]He quotes Colonel John Roosma's comments about "guts." Roosma said:

> "If you have the discipline to stand fast when your body wants to run, if you can control your temper and remain cheerful in the face of monotony or disappointment, you have guts in the soldiering sense. The training is hard, mental as well as physical. But once ingrained, you can face and fail the enemy as a soldier, and enjoy the challenges of life as a civilian."[2]

Decicco emphasizes that the high school principal needs "guts" to be sucessful.[3]

There may be a relationship between physical fitness and effective leadership, therefore, between physical fitness and the high school principal. Being physically fit could assist the high school principal to meet the complex and demanding requirements of the job. This would be a way for the principal to be at her/his best.

CONCEPTUAL BASE

The study is based on two concepts: (1) physically fit people feel better, look better, have more confidence and more positive self-concepts than unfit people do; and (2) principals need to function at an optimal level in order to be effective, and being physically fit would contribute to achieving that goal.

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[1]James Dicicco, ERIC ED 295311, 1986 page 15.

[2]Ibid, page 17.

[3]Ibid

Physical Fitness

Kenneth Cooper, who developed the concept of aerobics in 1968, has done much to draw attention to and document the physiological and psychological benefits of endurance-type (aerobic) exercise--running, swimming, cycling, skiing. This simply means any exercise that causes one's heart rate to be elevated to 60% or 80% of the maximum rate maintained for a period of 20 to 30 minutes 3 to 4 times per week. The maximum heart rate for an individual can be calculated by subtracting one's age from 220; one should exercise in the target range (between 60 and 80%) depending on one's aerobic fitness level.[4]

The benefits of such exercise on the cardiovascular and cardiorespiratory system are well-documented. The psychological benefits, however, are astonishing. In Florida, Killinger examined the area of the effect of aerobic fitness on the brain. He reports that aerobic fitness results in improvement in the following seven categories of the thinking process: originality of thought, duration of concentration, mental response time, ability to change topics quickly, depth of thinking, the ability to entertain a number of ideas at once, and mental tenacity.[5]

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[4]Kenneth A. Cooper, The Aerobics Way, New York, Bantam Books, 1981, page 183.

[5]Ibid, page 183.

Spino cites reduction in anxiety and irritability and improved ability to relax and sleep as benefits of aerobic running.[6] High physical arousal through exercise relieves tension; yet, like sleep, it can also restore energy reserves. True physical fitness acts to reduce or even prevent stress and disease by cardiovascular and respiratory conditioning and the maintenance of muscle tone. Such fitness encourages a positive self-image (is this not vital for a leader?) and an attitude of active control over one's life. This is one of the reasons that active exercise counters depression and anxiety.[7]

Cooper provides a physiological reason for this feeling of well-being. He contends that in the first place, improved cardiovascular fitness has a direct chemical effect on the brain. The increased circulatory flow to the brain makes available more oxygen and more glucose, both of which are necessary for the mind to function. A man whose oxygen supply is cut off will black out quickly, just as a man whose glucose and oxygen are "pulsating" through his brain will feel more wide awake and alert, more ready to handle whatever stresses and challenges the day has in store.[8]

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[6]Michael Spino, Running Home, Milbrae, California, Celestial Arts, 1977, page71.

[7]Ibid, page 72.

[8]Martin Shaffer, Life After Stress, New York and London, Plenum Press, 1982, page 16.

Exercise also has a direct effect on the adrenal hormones in the system, keeping them in balance. When you run, walk, swim, or go cycling, you literally burn up the tensions of the day and get better rest at night. Consquently, you have a greater ability to resist all types of stress, both on a chemical level and a psychological level.

Cardiovascular fitness is but one aspect of fitness, however. The three components of fitness are endurance, strength, and flexibility. Strength is a very important part of fitness; however, it may be the most misunderstood. People, as a rule, tend to start a walking, jogging, cycling, or swimming program more readily than they would a strength training program, for two basic reasons: (1) They do not know how, or which strength training method to use. (2) They feel that cardiovascular strength is enough. The former is understandable, for the market is literally full of gimmicks and contraptions to take your money--they are usually expensive.

Why is it necessary to increase one's muscular strength? After all, most people in the United States have enough strength to meet the needs of their daily routines. There are actually a number of reasons people engage in strength training programs. For some, it is the challenge of competitive weightlifting or bodybuilding. For others, it is a means to enhance performance in their favorite

sport. For still others, it is a way to rehabilitate an injured body part in order to resume normal activity.

Perhaps the most prevalent and least understood reason people train with weights is to add quality to their lives. Many people engage in strength training simply because they look better and feel better when they do. They find the training process enjoyable, and the training product well worth the effort. For most people, increased muscle strength is a gratifying accomplishment. Something about becoming strong enhances a person's self-image[9].

Strength training is an excellent activity for people who value physical ability and personal appearance. People who train with weights show a genuine concern for developing their physical potential and for maintaining a strong body. Weight training demonstrates, perhaps better than any other activity, the positive relationship between physical training and physiological improvement. Anyone who is interested in physical fitness should make strength training a regular physical activity.

In addition to doing calisthenics such as pushups, situps, and chinups; many people use barbells, dumbells, or machines, such as Nautilus or Universal Machines. Again

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[9]Richard James and Others, "The Effect of Weight-Training on the Self-Concept of Male Undergraduates", ERIC ED 240 435, 1982, page 1.

strength training is to be used only as a supplement to the aerobic program.

LEADERSHIP

When you talk about improved self-image, ability to entertain multiple thoughts, ability to handle stress, tenacity, improved appearance, and stronger muscles, does that not conjure up a mental picture of a leader? If a leader had good cardiovascular fitness, good muscular fitness, and good flexibility, s/he has an unmistakable advantage over his unfit counterparts.

Blanchard mentions "Pride" as one of the five P's of ethical power. He says that people who have pride and self-esteem tend to have the strength to do what is right, even when it is not popular to do so.[10] Leaders need a healthy self-esteem if they are to do the "One-Minute Praisings and Reprimand" effectively.[11] "Leaders light one candle rather than curse the darkness," according to Blanchard and Peale.[12]

Patinka lists the most prevalent characteristics of a leader as vigor, aggressiveness, self-confidence, and

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[10]Kenneth Blanchard and Norman Vincent Peale, The Power of Ethical Management, Fawcett-Crest, New York, 1988, page 47.

[11]Kenneth Blanchard and Robert Lorber, Putting the One-Minute Manager to Work, Berkley Books, New York, 1984.

[12]Kenneth Blanchard and Norman Vincent Peale, op. cit, page 132.

resilience.[13] What better way to improve these traits or develop them than to become physically fit? If an unfit leader is effective, s/he would be much more effective if s/he, in fact, were fit.

Korda says that a leader must have a certain irrational quality, a stubborn refusal to face facts, infectious optimism, the ability to convince us that all is not lost even when we are afraid it is.[14] Confucius suggested that, while the advisors of a great leader should be as cold as ice, the leader himself should have fire, a spark of divine madness.[15]

> "Our strength makes the leader strong; our determination makes him determined; our courage makes him a hero; he is, in the final analysis, the symbol of the best in us. We can not produce him; and even with all our skill at image building, we can not fake him. He is after all, merely the sum of us", offers Korda about leaders[16]

Leaders have great demands placed on them and often make decisions that affect the lives of a great number of people in very significant ways. A leader must know how to use power, but he also has to have a way of showing that he does. He has to be able to project firmness--not physical

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[13]Paul J. Patinka, "One More Time: Are Leaders Born or Made?," Crosscurrents in Leadership, Southern Illinois University Press, London and Amsterdam, 1979, page 36.

[14]Michael Korda, "How to Be a Leader," Contempory issues in Leadership, Westview Press, London, 1985, page 61.

[15]Ibid, page 62.

[16]Ibid, page 63.

clumsiness like President Ford, and no rapid eye movements like President Carter.

A leader must, above all, dignify our desires, convince us that we are taking part in the making of great history, and give us a sense of glory about ourselves. Winston Churchill managed, by sheer rhetoric, to turn the British defeat and the evacuation of Dunkirk in 1940 into a major victory. Roosevelt's words turned the sinking of the American fleet at Pearl Harbor into a national rallying cry instead of a humiliating defeat. A leader must stir our blood, not appeal to our reason.[17]

The task of the leader is to lead and to lead others, he must first know himself. His ultimate test is the wise use of power. As Sophocles says in Antigone:

> "It is hard to learn the mind of any mortal, or the heart, till he be tried in chief authority. Power shows the man."[18]

Even when a discrepancy exists, a leader knows how to tolerate the ambiguity between the desirable and the necessary, but not so much tolerance that the margin between them becomes undiscernible. When that happens, the leader is unwittingly evading the issue and rationalizing the problem.[19]

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[17]Ibid.

[18]Warren G. Bennis, "Where Have All the Leaders Gone?," Contempory Issues in Leadership, op. cit., page 54.

[19]Ibid, page 60.

He knows how to listen, to understand, not to evaluate. He knows how to play, to live with ambiguity and unconsistency. And most of all, the test of any leader is whether he can ride and direct the process of change and by doing, build new strengths in the process.[20]

High school principals are subject to all the general demands of leadership. Every cliche, generalization, and attempt at romanticizing about leaders would include the high school principalship. It is one of the most "bruising" executive jobs of our society. Decicco lists intelligence, communication abilities, trust in subordinates, a willingness to take risks, and the courage to be candid as some required characteristics of high school principals.[21]

Ritschel likens the role of high school principals to that of conductors of music. For example, both roles involve efficiency in organizational affairs and problems analysis; both roles involve judgment and decisiveness; both roles involve leadership and sensitivity; both roles involve stress and tolerance; and both roles necessitate efficient communication.[22]

It seems obvious that leaders should function both physically and mentally at their optimum level to carry out

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[20]Ibid.

[21]James K. Dicicco, op. cit, 1986, page 19.

[22]Robert E. Ritschel, "The Artistic Nature of the High School Principal," ERIC ED 295312.

their roles as the ones who make the decisions that make our organizations grow and thrive. The high school principal is a great example of a leader--subject to all the demands and stress that leadership has to offer.

Physical fitness in the form of aerobic exercise and strength training is one way for high school principals to be able to function at optimum level. It would seem that a strong and fit principal would be desirable, and in fact it is difficult to imagine why high school principals or any leaders would not want to be physically fit, which would positively affect their mental and emotional state.

PURPOSE

The purpose of the study is two-fold: (1) to find out how physically fit the high school principals of North Carolina are, (2) if physically fit principals are more effective leaders than principals who are not.

PROBLEM

The problem is simply this--even with the fitness craze in full swing, the average American is a physical wreck,[23] and some of these "wrecks" are leaders.

A recent eight-year study by Blair, Cooper, and others found that approximately 30% of adults are quite sedentary and the prevalence of low fitness levels is correspondingly high. They concluded that the high prevalance of sedentary

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[23]Kenneth Cooper, The New Aerobics, Bantam Books, New York, 1972, page 11.

habits and low fitness levels constitute an important public health problem that deserves immediate attention.[24]

Leaders should care about themselves enough to maintain a regular exercise regimen as part of their lifestyle--especially those whose job-related activities are largely sedentary. Those leaders who have a very physically active job do not have to be concerned about this as much as their sedentary counterparts, for their job takes care of much of the requirements for fitness.

The principalship of today's schools is one of the more demanding executive jobs in our society today. S/he is called upon to discipline students, be a role model in the community, negotiate with teachers, lead instruction, and deal with the superintendent and the Board of Education. Some of the obstacles to the job performance of the principal are teachers reluctant to change, rebellious students, and parents eager to criticize the school for the shortcomings of their childern.

The principal is a leader--s/he leads students, teachers, parents, and community. S/he deals with each of these on a daily basis. This is very stressful and demanding, and it is a task that requires a physically fit principal. The high school principal who builds vigorous

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[24]Steven N. Blair and Kenneth H. Cooper and others, "Physical Fitness and All-Cause Mortality", Journal of American Medical Association, Vol. 262, No. 17, November 3, 1989, page 2400.

exercise into her/his weekly schedule will be the best educational leader s/he can be. The schedule would ideally include aerobic exercise and strength training.

Limitations

A limitation of the study is that the principals will have to give permission for their superintendent to rate them on leadership skills. The superintendents will also have to agree to rate the principals in these 12 catagories.

The study will be limited also to the 289 high schools (9-12) in North Carolina. There will be no union schools (1-12) or junior -senior high schools (7-12) involved in the study.

Definition of Terms

Aerobic exercise: Any exercise that involves the rhythmic contractions of the large muscle groups in the body of sufficient intensity to increase the heart rate to between 65 - 80% of the maximum heart rate for at least 20 minutes.

Maximum heart rate: 220 minus your age. Example--a 40 year old person's MHR would be 220 - 40, or 180.

Isotonic exercise: A full range of motion for a muscle against resistance, as in calisthentics, or weight-training.

Organization of the Study

Chapter one introduces the study, identifies the problem, and provides a conceptual base that connects physical fitness and leadership. The review of the

literature chapter, chapter two, will provide an overview of what has been written about aerobic fitness, strength fitness, leadership, and the high school principalship. The relationship between physical fitness, leadership and the high school principalship, will be developed further in this chapter.

The design and methodology of the study will be described in chapter three. The fittest principals and the least fit principals will be evaluated on leadership effectiveness by their superintendents to see if there is a significant difference. Chapter four will outline the results of the study, and chapter five will include conclusions and implications for the future.

RESEARCH QUESTIONS

The research questions to be addressed in this study are:

1. How physically fit are principals in North Carolina?
2. Are physically fit principals more effective leaders than principals who are not physically fit?

CHAPTER II

REVIEW OF THE LITERATURE

The purpose of this study is to examine the relationship between physical fitness and the effective high school principal. Much has been written about the beneficial effects of physical fitness and much has been written about leadership and the high school principalship. However, there does not seem to be much literature connecting the two areas.

The study will try to determine whether the fittest North Carolina high school principals are also the most effective according to criteria produced by the literature and used by district superintendents to rate the principals. The hypothesis is that the fittest principals should be the most effective principals, given the significant and well-documented benefits of physical fitness. Fitness will be defined as having two components--aerobic fitness and strength fitness, the ideal combination and the goal for anyone interested in total fitness.

Physical Fitness

Dyer paints a descriptive picture of the importance of physical fitness in his book, The Sky's the Limit.

> "When you are physically fit, everything works better. You don't feel like overeating when you exercise regularly. You are constantly energized, rather than fatigued. Your digestive processes work more

> effeciently. Your heart is healthier. Your spleen, liver, lungs, arteries all benefit,and so of course does your mind: your brain gets more oxygen, better circulation, and you are in harmony with your instincts, rather than in constant conflict with them. Exercise prolongs your life, it gives you the physical equipment to ward off diseases more readily, it provides you with stamina for fighting exhaustion. In fact, it is the essence of your survival, and that is precisely the function of instincts; to help the organism to survive in as healthy a fashion as possible."[1]

He goes on to say that we crave exercise and want to be in top physical shape. We have inherited these instincts from our most "primitive" ancestors, hunters who had to run to catch food or be eaten themselves. Their very lives depended on their strength, endurance, and coordination. Our lifestyles and environments have changed radically over the past few thousand years, but our basic nature as animals has not.[2]

What happens to us? We "grow up," get a nine-to-five job, sit at a desk all day, and suddenly we are too busy or too tired to exercise. We deteriorate, get out of shape, and have trouble catching our breath. Our muscles ache, we have headaches--all mere excuses to keep us from following our instincts to exercise. According to Dyer, as we sit

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[1]Wayne Dyer, The Sky's the Limit, Simon & Shuster, New York, 1980, page 159.

[2]Ibid.

there at the bar or the television set, we get angrier by the minute at our "artificial enslavement."[3]

The real truth is that we need to be liberated from this "artificial enslavement." Being in good physical condition feels good; you will have more vigor and strength, more energy and less sickness when you let yourself become physically fit. Man was not meant to be sedentary; man was meant to run, bend, twist, lift, and be active. To be active mentally and not physically is not natural and not healthy--we need to exercise our bodies as well as minds. Life is not only mental, emotional, and spiritual; it is physical if it is indeed healthy.

Aerobic Fitness

Cooper is the undisputed leader in this area; he was the one who coined the term "aerobics" in his 1968 book called Aerobics. Aerobics was published in an effort to make American people more aware of their need for exercise and to encourage them to use exercise in the practice of preventive medicine.

According to Cooper, not only does aerobic exercise (running, walking, biking, swimming, etc.) strengthen the heart and improve cardiovascular fitness, but it affects the mind just as surely as a chemical stimulant or depressant.[4]

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[3]Ibid.

[4]Kenneth Cooper, The Aerobic Way, Bantam Books, New York, 1981, page 174.

Aerobic exercise is any exercise that involves rhythmic and sustained contraction of large muscles of the body to the extent that the heart rate is increased for a period of 20 to 30 minutes.

Improved cardiovascular fitness through aerobic exercise has significant physical benefits that are available to the person who follows a program diligently. Although Cooper recognizes exercises such as aerobic dancing, swimming, biking, and stair climbing as legitimate aerobic exercises, the most practical are walking, jogging, and running. These exercises do not require a swimming pool or any type of special equipment, other than a good pair of running shoes. Jogging is defined as slower than nine minutes a mile; running, as faster than nine minutes a mile.[5]

Cooper has done more research on the medical value of exercise than anyone. Since 1971, over 10,000 patients have been extensively evaluated at his Aerobic Center in Dallas, Texas, and thousands were evaluated before 1971.[6] Although many physical benefits of this type of exercise are well-documented, such as weight control, a general "toughening up" of the body's muscles, a dramatic improvement in the way one feels from day-to-day, and an increased energy level;

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[5]Ibid, page 16.

[6]Ibid, page 2.

much of Cooper's latest work has been in the way of heart disease.[7]

Physical Benefits

One of the most important benefits of aerobic exercise is the degree of protection against cardiovascular disease--heart attack and stroke. Fifty-five percent of the deaths in the United States comes from heart disease--nearly one million people die annually from this disease. It has not been as much that people are dying; people are killing themselves through harmful diets and sedentary lifestyles. Specialists in preventive medicine have proclaimed for years that proper exercise is one of the most important factors in controlling heart and cardiovascular disease.[8]

Aerobic exercise has a positive effect on most of the primary risk factors associated with heart disease. Tension, stress, and aggressive behavior patterns place a strain on the heart that has long been recognized as potentially lethal. When stressed, the body's hormonal systems act as they have been programmed since the Stone Age: they speed up the heart rate and increase the blood pressure to prepare the body for "flight or fight." If the body in fact does flee or fight, these adrenal hormones are metabolized, or "burned up." If the body does neither, or

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[7]Ibid, page 3.

[8]Ibid, page 4

if a personality pattern develops that continually interprets the world as a challenge or threat, the hormones remain in the bloodstream, and the body cannot relax. The cardiovascular system is under constant lowgrade pressure, and the wear and tear may show up as heart disease.[9] Exercise tends to burn up the tensions of the day so that the body and the heart can relax, also reducing what Friedman calls "free-floating hostility."[10]

There is a significant body of evidence that associates inactivity with heart disease. Researchers have compared conductors of London's double-decker buses with the less-active drivers, farm workers with other occupational groups, active and sedentary members of Israeli kibitzim (communes), active and sedentary longshoremen, and active and sedentary citizens in Framingham, Massachusetts. In these and in many other studies like them, the active had fewer heart problems than the sedentary.[11]

High blood pressure has long been generally recognized as one of the three major risk factors. Aerobic walking and running has lowered blood pressure significantly in almost every study. In Mitchell's study in Psychomatic Medicine, people lost about ten points on their diastolic pressure on

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[9] Ibid, page 28.

[10] Ibid, page 24.

[11] Ibid.

either a diet or exercising. When they combined diet and exercise, they lowered their blood pressure an additional four points.[12]

Also, according to a report in the American Journal of Medicine, in 1984, aerobic exercise alone has a beneficial effect on lowering blood pressure. In this study, 105 patients with high blood pressure began an exercise program, beginning with walking one mile a day and gradually escalating to two miles of jogging each day. The blood pressure of these patients was evaluated before exercise training and again three months after the participants were able to run two miles a day. Virtually all of the patients lowered their blood pressure. For the 58 who were not receiving medication at the beginning of the study, diastolic pressure (blood pressure when the heart dilates) fell by 15 points. In those who were on medication, their diastolic pressure fell 20 points. Twenty-four of these patients were able to stop taking their medication althgether, and 14 decreased or discontinued their medication altogether.[13]

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[12]Janice McCall Failes and Frank W. Cowood, High Blood Pressure Lowered Naturally, FC&A Publishing, Peachtree, Georgia, 1989, page 197.

[13]Steven N. Blair, PED, et. al., "Physical Fitness and Incidence of Hypertension in Healthy Mormotensive Men and Women," Journal of American Medical Association, Vol. 252, No. 4, July 27, 1984.

High cholesterol has long been associated with coronary disease, and the evidence continues to mount. For men, the risk of a first heart attack is more than doubled when cholesterol levels rise from between 225 and 250 up to 300 and over, according to figures from the National Heart and Lung Institute.[14] Why is cholesterol so dangerous? As most people know, high blood levels of cholesterol contribute to the formation of fatty deposits along the inside lining of the arteries.[15]

One way to lower cholesterol appears through aerobic exercise. In a study at the Aerobic Center involving mearly 3,000 men, a positive correlation was found between aerobic fitness and lower levels of cholesterol.[16] Also, a recent study by Lopez at Louisiana State University indicated a marked reduction in cholesterol after a ten-week program of exercise.[17]

Usually, people think of "obese" as referring to someone who is grossly overweight. However, when considering good health, you are "obese" in terms of increasing your risk of developing coronary disease if you

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[14]Cooper, op.cit. page 32.

[15]Ibid.

[16]Ibid.

[17]S. Lopez and others, "Effects of Exercise and Physical Fitness on Serum Lipids and Lipoproteins," Arteriosclerosis, Vol.20, 1974, pages 1-9.

are even moderately above your ideal weight. Recent studies have indicated strongly that just being overweight increases your risk of developing coronary disease.[18] A person's percentage of body fat is the best way to determine your ideal weight, and Cooper offers these percentages as acceptable for different age groups:[19]

Acceptable Percentages of Body Fat

Age	Men Acceptable	Ideal	Women Acceptable	Ideal
Under 30	13.0	9.0	18.0	16.0
30-39	16.5	12.5	20.0	18.0
40-49	19.0	15.0	23.5	18.5
50-59	20.5	16.5	26.5	21.5
Over 60	20.5	16.5	27.5	22.5

These acceptable standards have been developed from the data collected on more than 30,000 patients involved in the Aerobics Center longitudinal research study.[20]

There is a very definite connection between aerobic exercise and weight control. It burns up calories at the rate of around 100 calories per mile.[21] Aerobic exercise, along with diet, is included in most successful weight control programs, because of the fact that this kind of exercise actually "burns up" calories at the rate mentioned

[18]Cooper, page 95.

[19]Ibid, page 96.

[20]Ibid.

[21]Ibid, page 143.

above.[22] So, this ability of aerobic exercise to control some of the primary risk factors in heart and blood vessel disease make it a very important factor in the consideration of physical health.

Psychological Benefits

Kostrubala has been a leader in investigating the psychological benefits of running. He has successfully treated schizophrenics, alcoholics, and manic-depressives with running therapy. The San Diego psychiatrist has found that running is a natural cleansing experience that eases the anxiety and tensions which accompany major life transitions. Kostrubala recommends running for a minimum of one hour, three times a week. He has revolutionized the role of the sedentary psychiatrist offering analytic interpretations at a safe distance--he runs with his patients.[23]

A change in levels of glucose, testosterone, and catecholumines--substances in the blood that inhibit relaxation and have been identified with states of anxiety, aggression, and depression; was found by Ismail of Purdue University.[24] After only ten weeks of running, these

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[22]Mildred Cooper and Kenneth Cooper, Aerobics for Women, Bantam Books, New York, 1980, page 108.

[23]Thaddeus Kostrubala, The Joy of Running, Lippincott, Philadelphia, 1976.

[24]A. H. Ismail and L. E. Trachman, "Jogging the Imagination," Psychology Today, March 1973, pages 79-82.

paunchy and sedentary academics exhibited the beginning of a subtle yet definite personality change. He commented that they became more open and extroverted and their whole demeanor seemed more stable and self-confident.

Arrends talks about his priorities: "number one, God; number two, my physical well-being; number three, my family; number four, my career."[25] He claims that any adult should be able to run two miles in seventeen minutes until age sixty, since that is just basic physical fitness. Stress release is the primary value of exercise for most people, according to Arrends, who says that if one does not exercise, he will deteriorate.[26]

Berger has concluded in 1982 that approximately one-half of the studies examining the psychological benefits of jogging indicate that it does enhance psychological well-being. She pinpoints reduction of anxiety and depression as the most clearly defined impact of jogging on mood. In addition to reducing these undesirable mood states, jogging also tends to enhance feelings of vigor, clear-mindedness, self-concept, and self-esteem. She concludes that mood-enhancing effects are most likely to occur in activity programs that are at least 20 minutes in duration, are pursued on a regular basis (three to five times a week, and

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[25]Joseph Arrends, MD, "Health", Discovering Happiness, Avon Books, New York, 1986, page 126.

[26]Ibid, page 130.

are of moderate intensity) performed at 65% to 80% of maximal heart rate.[27]

According to Collingwood, the Dallas Independent School District took a giant step in 1984 toward making their employees healthy and happy and, at the same time, saving money. Collingwood is the director of Continuing Education for the Institute of Aerobics Research in Dallas, Texas. Eighty-seven out of 323 volunteers from the staff of three schools were chosen to be part of a control group that did not participate in training.[28]

After 13 weeks of training progressively to a fairly rigorous exercise program, the participants were given several tests. They answered questions about medical history, described changes in themselves, took a series of physical tests, and were rated on stress management and absenteeism. The results were impressive. Across the board, employees in the program showed a significant improvement in health and attitude. They increased their physical activity, cut down their smoking, and increased their aerobic fitness. Participants also decreased their weight, body fat, and blood pressure and showed signs of

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[27]Bonnie G. Berger, "Facts and Fancy: Mood Alteration through Exercise", Journal of Physical Education, Recreation, & Dance, Vol. 53, No. 9, November - December 1982, page 47.

[28]Thomas R. Collingwood, "This Good Health Regimen Deeps Employees Fit-and School Budgets Trim", American School Board Journal, Vol. 171, No. 4, April, 1986, page 48.

lessened anxiety and depression. In general, participants felt better about themselves and were significantly better able to handle stress. The same results were noted the next year when the program was implemented again.[29] One weakness of the study may be the self-rating in several tests, which may have involved the Hawthorne effect.[30]

Tishler notes that a study on college faculty and staff at the University of Montevallo in Alabama showed significant physiological and psychological changes after 28 weeks of regular exercise. Subjects noted an improved sense of personal esteem that was conveyed in their personal, professional, and social life. The experimental group participated in aerobic exercise (swimming, walking, running, cycling, or aerobic dance) and some strength-building exercises (pushups and situps) three times a week, and the control group did not exercise.[31] A weakness of the study was the small sample size.

An on-site health promotion program influenced lifestyle behavior, health, attitude, and stress in 41 university faculty and non-academic administrators, according to Horowitz. A short-term wellness program on

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[29]Ibid, page 49.

[30]Robert Pursley and Neil Smortland, Managing Government Organizations, Duxbury Press, 1980, page 166.

[31]J. Ward Tishler, "A University Faculty and Staff Health Fitness Program", University of Montevallo, ERIC ED 238 339, 1983, Page 14.

lifestyle behavior, health, perceived stress and strains, and moderators of job stress influenced health and attitude in a selected sample of university faculty and administrators.[32]

The study concluded that the increased well-being and reduced anxiety brought about by exercise could increase coping efforts allowing individuals to perceive their jobs as being less threatening or stressful. Thus, increasing the level of one's self-esteem, for example, could increase the perception of his/her ability to fulfill specific demands made on him/her and reduce the perceived misfit of demands/abilities. The results suggested that, in comparision with the control groups, subjects in the wellness program were better able to tolerate environmental work stress.[33] The positive changes in self-esteem reported in the study support the considerable research on exercise and effects on tension, anxiety, and depression.

Fourteen weeks on a warm-up, 30 minutes of walking and jogging, and a cool-down period proved psychologically beneficial to a group of older adults, according to a study by Perri and Templer. All who completed the fourteen week program reported some kind of positive change in their

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[32]Stephen M. Horowitz and others, "Wellness Intervention Effects On Lifestyle, Attitudes and Stress", ERIC ED 256 243, April, 1985, page 3.

[33]Ibid, page 11.

lives. The participants learned that change in their sedentary habits improved their physical health and appearance as well. Subjects lost weight, had an improved sense of well-being, and felt a sense of accomplishment in being involved in a strenuous sctivity that, for the most part, had previously been reserved for younger participants. Some typical comments were: "never felt better," "get along better with my husband and friends," "I sleep better," "I eat better," "more flexible physically," and "feel less depressed." An interesting finding was that short-term memory was not improved with exercise.[34]

The significant increase on self-concept and focus of control in elderly participants extends and underlines the previous literature reporting improvements in these two variables with younger participants. Both improved self-concept and greater perceived internal focus of control would seem to indicate that the participants had an increase of self-confidence and sense of mastery over their environment.

It seems clear from the literature that there are undeniable physiological and psychological benefits from aerobic exercise. Study after study points out weight control, protection against heart disease, improvement in

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[34]Samuel Perri and Donald I. Templer, "The Effects of an Aerobic Exercise Program on Psychological Variables in Older Adults", International Journal of Aging and Human Development, Vol. 20, November 3, 1984-85, pages 169-170.

attitude, improvement in ability to handle stress, less depression, and a greater sense of control over one's environment as attainable for most with a regular exercise program.

Cooper reports that aerobics is the official fitness program for the United States Air Force and countless people in every walk of life have found aerobics as a workable way to achieve new levels of physical competence and personal well-being. Athletic teams, both college and professional, have found it to be an excellent way to maintain a high level of fitness during the off-season. Many colleges and universities throughout the country have adopted aerobics as a part of their physical education program. All have shown interest because it it the first scientific attempt to validate and quantify the effect of exercise, and to answer questions of what kind, how often, and how much.[35]

The age range for the participants in this kind of exercise has been remarkable. A large proportion of aerobic fans--women and men--are in the 40-60 age bracket. Cooper says that men in this age group say that they took up aerobics as a type of life insurance, and women say that they consider aerobics a good way to keep their figures ans well as their health.[36] The benefits of regular aerobic

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[35]Kenneth H. Cooper, The New Aerobics, Bantam Books, New York, 1972, page 9.

[36]Ibid, page 10.

exercise may well be summed up in the letter to Cooper from an elderly gentleman who uses brisk walking as his form of aerobic exercise:[37]

> "Dear Dr. Cooper:
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> I want to take this opportunity to thank you for the aerobic conditioning program. I have followed the program faithfully for over nine months. I sleep better, feel better, and have gone through the winter without any medical problems for the first time in years--and I am anxiously awaiting my 94th year"

STRENGTH TRAINING

Although aerobic fitness is the most important part of a fitness program, some mention should be made of strength training; for strength fitness is part of total fitness. As mentioned in Chapter I, Cooper suggests calisthentics as a supplement to whatever aerobic program is undertaken.

However, some people may want to involve themselves more intensely in the strength training part of their program.[38] There are many methods available to achieve that--the most available and most economical is the use of barbells and dumbells in a progressive resistance program.[39] In a program of calisthentics, one soon reaches a strength plateau beyond which it is difficult to pass, since the resistance is body weight, and is not subject to any

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[37]Ibid, page 9.

[38]Wayne Westcott, Strength Fitness: Physiological Principles and Training Techniques, Allyn and Bacon, Inc., 1983, page 215.

[39]Ibid.

significant change. With barbells and dumbells, however, it is possible to progress by increasing the resistance by adding weight to the barbell or dumbell as one becomes stronger. This is the big advantage of weight training over calisthentics--one can become much stronger with weight training than with calisthentics.[40]

There are machines available that simulate the exercises that can be done with barbells and dumbells. The most famous and widely used of these machines are the Universal machine and the Nautilus machine. The Universal machines provide a safe and convenient way to train. The use of weight stacks eliminates the need to change barbell plates between exercise sets, and saves a considerable amount of time and energy. The design of the equipment also permits one to train without the assistance of a partner or spotter. Universal Gym machines have excellent safety and durability records.

A significant advancement in the field of strength training has been the introduction of Nautilus training principles and Nautilus training equipment. The variable resistance approach developed by Nautilus utiluzes an oval shaped cam to automatically change the resistance throughout the range on movement. Theoretically, the resistance is supposed to be the greatest when the muscle is at the

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[40] Ibid page 72.

strongest point in the strength curve, and the least when the muscle is at the weakest point.[41]

People have developed great strength and physiques with barbell training, Universal Gym training, and Nautilus training. Most will make gains as long as the basic principles of strength development are followed. The key to success in strength development, as in any other endeavor, is hard work, but that hard work should be enjoyable.[42]

Although research is very limited on the effectiveness of weight training for a better life for the average citizen, there is abundant information on how weight training improves performance in almost all sports, and some of this improvement comes not only from a stronger body, but increased confidence. Goss talks about a young 153 pound quarterback from the Air Force Academy:

> "Other than being awfully small, my first impression of Del when he first came to the academy was that he was timid. I believe that the extra effort he has put in the weight room not only improved his athletic ability, but also his self-confidence."[43]

The confidence comes from the knowledge that you are stronger that the average person, and that you have worked to change yourself in a positive way. According to James, a one semester weight training program had a positive effect

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[41] Ibid, page 117.

[42] Ibid, page 115.

[43] Kim Goss, "Del Dowis: The Gridiron Giant," Bigger, Faster, Stronger, December, 1988, page 3.

on the self-concept of male undergraduates at Memphis State University.[44] This was due in part to the fact that body image was consistently correlated with self-concept for males. The highest prerequisites for a good body image for male were a good looking face and a well developed chest. College males feel that the more mesomorphic the body type one has, the more positively enhanced one's self-concept will be.[45] A flaw in the study was that a follow-up study did not confirm the positive changes.

The benefits of weight training are not confined to men, however. Kennedy declares the 23 years of research on the subject have convinced him that weight training is the most effective way to firm up and shape every area of the female body. He suggests that, for women, it is reasonable to expect that your self-image and confidence will improve along with an improvement in health, fitness, curvaciousness, and well-being.[46]

Glass said over 20 years ago that weight training was necessary to have a well developed, fit body. He said that it was an important part of being physically, mentally, and

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[44]Richard James and others, "The Effect of Weight Training on the Self-concept of Male Undergraduates," ERIC ED 240435, 1982, page 1.

[45]R. C. Bailey, "Body Build Perceptions in Male and Female College Students," Social Behavior and Personality, 1979, page 7.

[46]Robert Kennedy, Body-Building for Women, Simon & Shuster, New York, 1979, page 20.

spiritually strong, all three being necessary to be a whole, or well-balanced person.[47]

Strength training is necessary for total fitness, and it is a part of the study. However, it is acceptable to do Cooper's calisthentics instead of getting involved in an intensive program of weight training with barbells or machines. The ideal program would be at least three days a week of aerobic exercise and at least two days of strength building exercise.[48] This combined program of aerobic exercise and strength training will serve as the ideal for the study, with various stages between the "least fit" and the "most fit."

Thus, in a society that is becoming increasingly sedentary, it is necessary to incorporate a physical fitness regimen into our lives to look better, feel better, and to live and function at optimum level. Man was not meant to sit--he was meant to run, bend, twist, lift, walk, and to be active.[49] And, as research shows when one is physically active, s/he is also mentally more active and emotionally happier and more stable.

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[47]Bill Glass, Stand Tall and Straight, Word Books, Waco, Texas, 1967, page 104.

[48]Cooper, op. cit, page 193.

[49]Lou Ravelle, Bodybuilding for Everyone, Simon & Shuter, New York, 1977, page 15.

THE HIGH SCHOOL PRINCIPAL

Leadership and the Principal

"Leadership is the very heart and soul of the principalship," says Dicicco.[50] He goes on to quote Blanchard:

> "Leadership is a broader concept than management. Management is thought of as a special kind of leadership in which the acheivement of organizational goals is paramount. The key difference between the two concepts, therefore, lies in the word "organization." Leadership occurs any time one attempts to influence behavior of an individual or group, regardless of the reason."[51]

Schools are not managed by shuffling or rearranging organizatinal charts or applying the latest educational research formulas. Principals manage people in a school. They must be treated with respect, and respect is gained the old-fashioned way--it is earned.[52]

The principal must be absolutely above-board in her/his interactions with her/his people. S/he must never strip her/his people of their dignity and should always show respect, honesty, and thoughtfulness to her/his staff. This should produce high morale in the school, which is one of

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[50]Decicco, op. cit., page 12.

[51]Ibid.

[52]Ibid.

the most important ingredients for improving the quality of instruction in our schools.[53]

Leadership is motivating people to do what the leader wants because the leader has influenced or inspired them to believe and to complete their assigned task. A leader must deal directly with people. If s/he is uncomfortable around people, s/he will never be an effective leader and should pursue another endeavor. The two essential ingredients of successfull leadership are: (1) the capacity to perceive what should be done, and (2) the ability to influence other people to achieve results.[54]

Great leaders seem to be able to simplify and to cut through arguments, debates, and doubt to offer a solution. The walk of a leader should be firm and purposeful; they should know how to appear relaxed and confident. People want to be moved, excited, and uplifted--the staff wants to be led.

Ihle talks about the BIG principal as being what schools and teachers want in their leaders. He differentiates between structural power and personal power. Structural power is whatever authority the state and the school board have conferred to the individual, and personal power is the influence an individual has on neutral

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[53] Ibid.

[54] Ibid, page 13.

territory with other individuals. If the rich man and his servant exchange roles when stranded on a desert island, then the servant's personal power was better. When they return to civilization, if they return to the former arrangement, the rich man has reasserted his structural power.[55]

Ihle admits that personal and structural power seldom operate exclusive of each other, but that they should be perceived as in a fraction, with the numerator representing personal power and the denominator, structual. The outstanding principal is an example of an improper fraction, or to some extent bigger than the job.[56] In other words, a principal who is a "proper fraction," with the denominator (structural power), relies too much on structural authority and is usually a marginal leader.[57]

"Bigness" is a mystical concept, only definable when two principals of similar qualifications produce different results. There is just a sense of an "aura" that makes everything work well. When Iole was asked how he knew Hercules was a god, he answered, "Because I was content the

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[55]Richard Ihle, "Defining the BIG Principal-What Schools and Teachers Want in their Leaders," NASSP Bulletin, Vol. 71, No. 500, September, 1987, page 96.

[56]Ibid, page 95.

[57]Ibid.

moment I saw him. He conquered wherever he stood, walked, and sat, or whatever thing he did."[58]

Perhaps Peters is talking about "Bigness" when he lists vision, energy, sympathy, persistence, passion, attention to detail, and a picture of the goal as predictors of success for a leader. Terms such as "immediacy," "spiritual energy," "optimism," and "spirit" are used when discussing great leaders.[59]

Lightfoot says that personal presence is the key to a principal's success in an Atlanta high school in a deteriorated neighborhood. "He dominates the school. He is a man of great energy. He walks around the campus in perpetual motion looking severe and determined. He does not want to be out of touch with any corner of his sphere. There is a sense of immediacy about him, an unwillingness to be held back."[60]

The Job and the Setting

A high school principal must initiate some structure to the school, just as the musical conductor must coordinate the diversified elements of music into a meaningful whole, according to Ritschel. A person possessing vision, willingness to experiment and change, the capacity to

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[58] Ibid, page 98.

[59] Tom Peters and Nancy Austin, A Passion for Excellence, Warner Books, New York, 1985, page 485.

[60] Ibid, page 470.

tolerate messiness, the ability to take the long-term view, and a willingness to revise systems could describe a high school principal as a musical conductor. The principal must deal with curriculum and instruction, funds, facilities, school, community relations, pupil personnel services and professional support services just as the composer must deal with various combinations of instruments or voices, setting texts to music, or selecting appropriate styles of music.[61]

What about elementary school principals? Do they not face similar situations on their job as secondary principals do? Firestone and Heriott point out that the two grade levels are different in important respects. Elementary schools have a greater sense of shared purpose with a greater emphasis on basic skills instruction. Elementary principals also have more opportunity to be instructional leaders by influencing classroom management.[62]

The key difference in the two organizations seems to be that secondary schools are departmentalized, thus creating a broad range of goals built into the structure of a school.

This occurs when the school has separate units for teaching English, mathematics, social studies, and other subjects. Even the most charismatic principal may find it

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[61]Ritschel, op. cit., page 5.

[62]William Firestone and Robert E. Herriott, "Effective Schools: Do Elementary Prescriptions fit Secondary Schools?" ERIC ED 223761, Page 9.

difficult to create consensus on instructional goals with such diversity.[63]

Departmentalization can undermine the principal's influence when teachers expect the high school principal to be an expert in all subject areas. The high school principal should have more knowledge about more subject areas in order to offer assistance. Ideally, the high school principal should be a generalist, with expertise in a few subject areas and the ability to recognize effective instruction on any subject.

Another factor that limits the principal's influence with teachers at the secondary level is staff size. The average secondary school has 37 teachers while the average elementary staff numbers only 17.[64] Because of this, a great deal of teacher contact is delegated to others, such as assistant principals and department heads.[65] Firestone and Herriott suggest thinking of the elementary school as a work group or team and the principal as the head coach. The secondary school may be thought of as a complex corporation and the principal as chief executive officer.[66]

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[63] Ibid. page 10.

[64] Ibid, page 11.

[65] Ibid.

[66] Ibid, page 13.

How do high school principals see themselves and their jobs? Oregon high school principals perceive their roles as management, orchestration, facilitation, instruction, reorganization, and team builder. They also believe that the principal should know about the change process, understand the staff and the community, be willing to take risks (and support risk-taking on the part of the staff), monitor the changes, communicate, be a leader. They concluded that when all is said and done, the principal is the person who must be "in charge," know what decisions need to be made, and who can bring the decisions about.[67]

Illinois high school principals perceive school management as the primary focus of their jobs.[68] Ohio high school principals perceive two major obstacles to spending more time working on instructional improvement: (1) time spent handling student discipline problems and (2) faculty resistance to new instructional ideas.[69] Urban high school principals feel that comprehensive high school principals

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[67]"Quality High Schools: What Principals Have to Say," Monograph ERIC ED 228716, pages 22-23.

[68]James H. Stronge, "The Functional Role of the Building-Level Administrator," Spectrum, Vol. 4, No. 2, Spring, 1986, page 39.

[69]John M. Trump, "What Hinders or Prevents Secondary School Principals from Being Instructional Leaders?" ERIC ED 284365, 1986, page 2.

tend to provide more leadership in administrative areas than in instructional areas.[70]

Texas principals, according to Beck, see their job best described as multi-dimensional and complex. The most important sources of competence by principals were on-the-job experience and common sense. University educational administration preparation programs were seen as least important.[71]

Some interesting demographic information came out of the study. Female principals perceived themselves as having significantly more expertise in curriculum development, instructional leadership, and teacher evaluation skills, than did male principals. This may be explained by the fact that female principals are newer to the principalship and therefore more aware of the importance of these skills. Another possibility is that females in the study were predominantly at the elementary level, and traditionally elementary principals have been more involved in curriculum and instruction than their secondary counterparts.[72]

Elementary principals tended to indicate a wider range of dissatifiers than did middle school or high school

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[70]Rolf K. Blank, "Principal Leadership in Urban High Schools," ERIC ED 269889, 1986, page 3.

[71]John J. Beck, "Profile of the Principalship: A Study of Principals' Perception," ERIC ED 289228, page 34.

[72]Ibid, page 37.

principals. Amazingly, the elementary principals listed stress as a dissatisfier where the other two groups did not. They also listed uncommitted teachers, custodial supervision, understaffing and local politics as dissatisfiers whereas the other two groups did not. A sample of 1,000 principals made this a worthwhile and informative study of principals' perceptions of the principalship.

Pellicer studied high school leaders and their schools, and found that they are more concerned with new educational directions than day-to-day operations. He found the high school principalship to be a very time-consuming job--the majority of principals in the study work more than 55 hours a week. They spend more time on school management than any other task, but typically spend more than four hours per week observing classrooms informally. Road blocks to effectiveness include an erosion of principal authority, "administrivia," a lack of time to do the job, insufficient funding, apathetic parents, new state guidelines, and administration and supervison of student activities.[73]

They rate their jobs highly in terms of opportunity to help others, job security, prestige, independence, and self-fulfillment; however, they are least satisfied with their salaries and the time they must spend on the job. A low

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[73]Leonard O. Pellicer, "High School Leaders and their Schools," ERIC ED 299 711, page 32.

return rate due to the length of the survey instrument may have weakened the study, although 716 of 1,544 instruments were eventually returned in the national survey.

Manasse offers this assessment of effective principals. She says that effective principals communicate high expectations to students and teachers and are resourceful managers. They exhibit high energy levels, strong communication and human relation skills, and a high tolerance for stress.[74]

Principals set the tone for their schools and determine the environment for students, according to Boyer.[75] Rich accomplished this at a run-down high school in Queens, New York, which had a reputation as the most difficult school in Queens. The walls of the school were covered with graffiti, many students spent the whole day in the halls, drugs were sold in the cafeteria, and fear permeated the campus.[76]

Things are different now at the school, largely due to Rich's efforts. The building is clean, and most of the 3,050 students go to class in an orderly fashion. Everyone from the custodial staff to the teachers believe that the school is on its way to becoming a successful educational

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[74]Lorrie A. Manasse, "Improving Conditions for Principal Effectiveness: Policy Implications of Research on Effective Principal," ERIC ED 245 355, June, 1983, page 15.

[75]Pellicer, op. cit., page 8

[76]Evelyn Jones Rich,"Making it Happen: Turning a High School Around," Social Policy, Vol. 13, No. 3, Winter, 1983, page 40.

institution. Rich accomplished this by constantly being in the halls, implementing a discipline policy for staff and students, calling staff and students by their name, treating everyone with respect, and appealing to the community for assistance. Standardized test scores have risen, and the school has literally been transformed due to a principal with vision, energy, commitment, and courage.[77]

Schwartz investigated the role of the principal in schools that are hostile or potentially hostile, such as gang-impacted schools. Principals in school environment such as these exhibit more control orientation than do principals in safe schools. These behaviors of high control and of low administrative task are related positively to pupil climate in gang-impacted schools and are related negatively in non-gang schools. These findings support the contingency theories of leadership which would say that there is no preferred style for all secondary schools. He questions whether the principal leads according to his/her personality as investigated by Briggs Meyer,[78] or according to the situation, as contended by Hersey and Blanchard.[79] Discussions with superintendents in the districts studied

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[77]Ibid, page 43.

[78]Isabel Briggs Meyers, Introduction to Type, Consulting Psychologists Press, Inc., Palo Alto, California, 1976.

[79]Paul Hersey and Kenneth H. Blanchard, Management of Organizational Behavior Utilizing Human Resources, Prentice-Hall, Inc., 1977.

indicate that the situation dictates the leadership style,[80] which is supported by recent literature and the belief of the researcher.

The high school principalship is a very demanding and multi-dimensional job. The principal must discipline students, evaluate teachers, manage the physcial plant, supervise and manage all school-related activities, attend to daily "emergencies," manage conflict--all this while communicating with staff, students parents, and community. While the elementary principal is the "coach," the high school principal is the CEO with all of the responsibilities of the corporate CEO, but with few of the "perks," such as the six-figure salary. The high school principal is one of today's most overworked executives, often working from eight o'clock in the morning to midnight several nights a week.

In addition to the responsibilities, Brubaker says that "the principal's main claim to expertise is her/his ability to exert curriculum leadership."[81] He should lead by example as curriculum leader in the all-encompassing "living curriculum." In this view of curriculum, it is what each

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[80]Audrey J. Schwartz, "Principals' Leadership Behaviors in Gang-Impacted High Schools and their Effects on Pupil Climate," ERIC ED 296451, April, 1988, page 14.

[81]Dale Brubaker, "A Revisionist View of the Principal as Cruuiculum Leader," Journal of Instructional Psychology. Vol. II, No. 4, December, 1985, page 180.

person experiences during the school day, starting when s/he boards the bus in the morning and ending when s/he goes home in the afternoon or that night. All the interactions and experiences with the bus driver, the teachers, the assistant principal, the students, and the cafeteria workers are part of the "curriculum." The principal is the leader as he helps to create learning settings cooperatively with students and staff.[82]

The high school principalship is one of today's most rewarding and exciting, yet demanding executive jobs. Weak-hearted need not apply.

Synthesis

Given the well-documented benefits of physical fitness, especially aerobic fitness; and the demands and requirements of the high school principal, it would seem logical to assume that the high school principal would want to be in top physical shape. Most of the literature mentions "high energy levels" as requirement for effective leaders. The literature about evaluation of principals almost always includes "stress tolerance" as one of the evaluative criteria. A regular aerobic exercise program is an important part of a stress management program. The literature says that a principal must be an instructional leader. It would help to inspire your staff to feel good

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[82]Ibid, page 177.

and look good, a benefit of regular exercise and physical fitness.

Of course, there are many more factors that are important in the success of the high school principal. However, one of the most important ways that a principal can continue to "run the job" and not "let the job run her/him" is to build some time in her/his weekly schedule for at least three days of aerobic exercise (running, walking, swimming, and biking) and two days of strength building exercise (calisthentics or weight training). This would be of inmeasurable benefit to the principal in her/his professional and personal life, and the odds are that s/he would be a more effective principal.

CHAPTER III

METHODOLOGY

Hypothesis

The questions that the study was designed to answer are: (1) How physically fit are high school principals in North Carolina? (2) Are the fittest principals also the most effective school leaders? The hypothesis was that the fittest principals are also the most effective principals.

Design

In order to assess the effect of physical fitness on the effectiveness of high school principals, a static-group comparison was used. A group which has experienced X (physical fitness) was compared with one which has not, for the purpose of establishing the effect of X. This design is acceptable in educational research, although the obvious weakness is that the groups may have differed because of the differential recruitment of the two groups, or because of some other factor.[1]

Sample

The population for the study was the 217 high school principals in North Carolina.[2] These principals were

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[1]Donald T. Campbell and Julian C. Stanley, Experimental and Quassis-Experimental Designs for Research, Houghton-Mifflin Company, Boston, 1966, page 12.

[2]Statement by Lee Grier, North Carolina Department of Public Instruction, telephone interview, November 28, 1984.

evaluated to see how physically fit they were. There are some union schools (1-12) and junior-senior high schools (7-12), however the study was confined to the high school (9-12) principals, which number 217, according to the North Carolina Department of Public Instruction.

Measurement Instruments

The instrument used to measure the level of physical fitness was based on the instrument used by the Center for Disease Control in Atlanta to measure activity level. Physical activity level served as an indicator of physical fitness for the purpose of the study, for physical activity is an important determinant of physical fitness.[3]

The construct validity requirements for the instrument are met by the Center for Disease Control, the literature about physical fitness already cited, and coversations with experts in Health Education--Howell[4] and Smith.[5] Physical fitness is a domain, and the questions in the instrument lie within that theoretical domain, according to the literature, experts in the field,[6] and the Center for Disease Control.

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[3]Blair and Cooper, op. cit. page 1.

[4]Statement by Keith Howell, Department of Health Education, personal interview, January 2, 1990.

[5]Statement by Dennis Smith, Department of Health Education, personal interview, January 2, 1990.

[6]Ted A. Baumgartner and Andrew S. Jackson, Measurement for Evaluation in Physical Education, William C. Brown Company, Publisher, 1982, page 136.

The instrument is a quantitative instrument consisting of two questions, with a maximum score of 14. One could score as many as seven points by participating in only one type of fitness activity seven days a week. However, 14 points could be earned by combining seven days a week for aerobic activity and seven days a week for strength-building. This combination is necessary to achieve total fitness, although not to that extent.

Although it is true that if a measurement instrument is perfectly valid, there is no need to test for reliability as often as we do; however, this is not often the case. Reliability is an indication of the extent to which a measure contains variable errors that differed from individual to individual. The instrument was piloted to check validity and reliability.

Effectiveness of the high school principal was measured using a five-step LIKERT scale[7] to measure the National Association of Secondary School Principals administrator assessment program's 12 generic skill areas: problem, analysis, judgment, organizational ability, decisiveness, leadership, sensitivity, stress tolerance, oral

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[7]Ibid, page 114.

communication, written communication, range of interests, personal motivation, and educational values.[9]

Many of the traits listed in the NASSP's generic skills areas are found in the literature about leadership. Blanchard mentions decisiveness and judgment;[9] Patinka talks about personal motivation;[10] Korda cites pure leadership by inspiration as being important;[11] Bennis mentions stress management as being necessary to tolerate the ambigiuties of leadership;[12] and Decicco writes about communication abilities as a required characteristic of high school principals.[13] Ritschel mentions many qualities on the NASSP list in his comparison of the high school principal and the conductor--organizational ability, problem analysis, judgment, decisiveness, leadership, sensitivity, stress tolerance, and efficient communication.[14] The literature about leadership and the high school principal seem to validate the NASSP list as leadership characteristics. This

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[9]Joe A. Richardson and Richard H. Barbe, "Fairness, As Important Attribute of Principals in Excellent Schools."NASSP Bulletin, Vol.71, No. 500, September, 1987, page 100.

[9]Blanchard and Peale, Ibid.

[10]Patinka, Ibid.

[11]Korda, Ibid.

[12]Bennis, Ibid.

[13]Decicco, Ibid.

[14]Ritschel, Ibid.

list is much more useful for the purpose of the study than principal evaluation forms now in use, which are rather vague.

Research has indicated a high degree of predictive validity in that principals who score high in these areas more often than not turn out to be effective. These would also seem to verify content validity of these areas. A score of five will match the most effective with one being the least effective.

Data Collection

The fitness survey was sent to the population of 217 high school principals in North Carolina. The principals were ranked according to their score on the questionnaire. The top quadrant was identified, as was the bottom quadrant (25%), according to the scores. A return rate of around 67% was sought, with follow-up calls to the ones slow in responding.

The instrument to measure principal effectiveness was sent to the superintendents of their respected school districts. The instrument was accompanied with a cover letter by the researcher, the chairman of his committee, and several superintendents. This was to encourage prompt and full response and cooperation from the superintendents. Their willingness to cooperate in a conscientious and candid way was crucial to the study, and every effort was made to deal with this issue in a positive and sensitive manner.

Data Analysis

The principals were divided into the top quadrant and the bottom quadrant according to their score on the fitness instrument. This came from a sample of 123 responses.

The principal effectiveness scores of the top quadrant was compared to the scores of the bottom quadrant. A t-test was conducted to see if the differences between the two groups are significant at P = .05. An Analysis of Variance (ANOVA) was also conducted to futher analyze the comparison between the two groups.

Pilot Test

A pilot test of the research procedure was conducted using twelve high school principals in the Piedmont area. There was a difference between leadership scores of the physically fit principals (Q1) and physically unfit leaders (Q4); however, due to the small number in each quadrant (3), the difference was very small (P < .41). Table one is a comparison of scores, table two gives descriptive statistics, and table three describes the t-test.

Table 1

Score Comparasions

Number	Fit Leaders (Q1)	Unfit Leaders (Q4)
1	38	42
2	42	37
3	37	36

Table 2

Descriptive Statistics

Q1: Fit Leaders

Mean	Std. Dev.	Std. Error	Variance	Coef. Var.	Count
39	.646	1.528	7	6.784	3
Min.	**Max.**	**Range**	**Sum**	**Sum of Sqr.**	**# Missing**
37	42	5	117	4577	0

Q4: Unfit Leaders

Mean	Std. Dev.	Std. Error	Variance	Coef. Var.	Count
38.333	3.215	1.856	10.333	8.386	3
Min.	**Max.**	**Range**	**Sum**	**Sum of Sqr.**	**# Missing**
36	42	6	115	4429	0

Table 3

T-Test

	T-Test Q1: Fit Leaders	Q4: Unfit Leaders	
DF:	Mean Q1-Q4	t value	Prob. (1-tail)
2	.667	.256	.4109

CHAPTER IV

SUMMARY OF DESCRIPTIVE DATA

The purposes of this study were to determine 1) the physical fitness of North Carolina High School Principals and 2) if physically fit principals are rated as more effective leaders than principals who are not fit. The hypothesis was that the fittest principals were also the most effective school leaders. Fifty-seven percent of the principals returned the fitness questionnaire, and sixty-three percent of the leadership evaluation instruments were returned.

Table 4

Survey Response Rate

Category	Number Surveys	Responses	Responses Rate
Physical Fitness	217	123	57%
Leadership	112	70	63%
Chose not to be evaluated on leadership		11	9%

There were some interesting findings in the results of the fitness survey. Although twenty-one percent of the principals reported doing no exercise at all, an average North Carolina high school principal exercises 3.66 times a

week. Every high school principal in North Carolina was sent a questionnaire in order for them to self-report their activity level. The questionnaire consisted of two questions, one concerning how many times per week they participated in aerobic exercise and the other asking how many times per week they participated in some form of calisthenics, or strength training.

The principals were then ranked according to how many times they exercised per week and divided into the top quartile and bottom quartile. There was a substantial difference between the two groups -- the top quartile had a mean of 7.72 and the bottom quartile had a mean of .111.

Table 5

Fitness Scores

Number	Fit Leaders (Q1)	Unfit Leaders (Q4)
1	0	5
2	0	6
3	0	6
4	0	6
5	0	6
6	0	6
7	0	7
8	0	7
9	0	7
10	0	7
11	0	8
12	0	8
13	0	10
14	0	10
15	0	10
16	0	10
17	1	10
18	1	10

Table 6

Fitness Scores

Q1					
Mean	Std. Dev.	Std. Error	Variance	Coef. Var.	Count
7.722	1.809	.426	3.271	23.421	18
Min.	Max.	Range	Sum	Sum of Sqr.	#Missing
5	10	5	139	1129	0

Q4					
Mean	Std. Dev.	Std. Error	Variance	Coef. Var.	Count
.111	.323	.076	.105	291.043	18
Min.	Max.	Range	Sum	Sum of Sqr.	#Missing
0	1	1	2	2	0

In order to evaluate the leadership effectiveness of principals, survey forms were sent to the superintendents of the ones who consented to be evaluated. The evaluation form used by the superintendents rated them on a five-point Likert-type scale on twelve traits deemed by the National Association of Secondary School Principals to be predicted a success as a school prinicpal. Traits such as decisiveness, leadership, sensitivity, and stress tolerance were used. Table 7 presents a comparison of the scores for each group.

Table 7

Leadership Scores

Number	Fit Leaders (Q1)	Unfit Leaders (Q4)
1	45	37
2	43	43
3	40	29
4	48	46
5	46	46
6	46	36
7	41	46
8	43	44
9	43	34
10	43	36
11	45	38
12	45	42
13	40	40
14	37	42
15	46	41
16	42	38
17	42	42
18	42	36

Descriptive statistics on leadership scores were computed for each group. This data indicated a mean of

43.167 for the "Fit Leaders" and a mean of 39.7 for the "Unfit Leaders." The range of 11 in the "Fit" group was substantially less than the range of 17 in the "Unfit" group. Table 8 presents a summary of the descriptive statistics for each group.

Table 8

Leadership Scores

Fit Leaders (Q1)

Mean	Std. Dev.	Std. Error	Variance	Coef. Var.	Count
43.167	2.706	638	7.324	6.269	18

Min.	Max.	Range	Sum	Sum of Sqr.	#Missing
37	48	11	777	33665	0

Unfit Leaders (Q4)

Mean	Std. Dev.	Std. Error	Variance	Coef. Var.	Count
39.778	4.647	1.095	21.595	11.682	18

Min.	Max.	Range	Sum	Sum of Sqr.	#Missing
29	46	17	716	28848	0

RESEARCH QUESTIONS

The first research question was: How physically fit are high school principals in North Carolina? The study indicates that North Carolina principals are more fit than the general population, with sixty-six percent of them exercising at least three times a week, as noted in Table 2. Blair's study indicated that the majority of Americans are quite sedentary, with less than thirty percent exercising on a regular basis.[1]

The second research question asked if physically fit principals are rated as more effective leaders than principals who are not as physically fit. The fittest quartile (Q1) of the principals were compared to the least fit quartile (Q4) according to their leadership scores. A one-tailed T-test for unpaired groups was computed to determine if the difference between the means of the Q1 and Q4 groups were statistically significant at $P<.05$. The mean difference between the two groups was 3.389, which resulted in a probability of .0043. The probability is significant beyond the accepted level of confidence and supports the research hypothesis that principals who are physically fit are more effective leaders than principals who are not.

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[1]Blair, op. cit., page 2395.

Table 9

T-Test for Unpaired Groups

X 1: Fit Leaders Y1: Unfit Leaders			
DF	Mean X - Y	T Value	Prob. (1-tail)
17	3.389	2.97	.0043

An Analysis of Varience (ANOVA) was conducted to further analyze the data and examine the large standard deviation (4.647) with the "Unfit Leaders" group. The F-test ratio of the comparison was significant at the .05 level.

Table 10

ANOVA

Comparison	Mean Diff.	Fisher PLSD.	Scheffe F-test	Dunnet t
Fit vs. Unfit	3.389	2.407*	8.824*	2.97

*Significant at .05

CONCLUSION

The T-test and F-ratio from the ANOVA each indicate a statistically significant difference between the two groups (Q1 and Q4). The research hypothesis that physically fit high school principals are more effective leaders than principals who are not fit is supported and the null hypothesis is rejected.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

The purpose of this study was to investigate the relationship between physical fitness and leadership effectiveness of North Carolina High School Principals. Fitness evaluation instruments were sent to all 217 high school principals in North Carolina. The instrument consisted of two questions, one concerning the frequency and duration of participation in aerobic exercise and the other measuring frequency and duration of participation in strength training. This self-report instrument measured their physical activity level, which is an important determinant and indicator of physical fitness.

The principals were divided into the top quartile (25%) and bottom quartile (25%) based on the fitness scores. Leadership evaluation instruments were sent to their superintendents to evaluate the leadership of the principals in the top and bottom quartile. The top quartile was compared to the bottom quartile based on leadership effective scores. The evaluation instrument used by the superintendents consisted of a Likert-type scale to measure twelve traits deemed by the National Association of Secondary School Principals to be indicative of success as a secondary school principal.

Research Question One

The first research question was: How physically fit are high school principals in North Carolina? The results of this study indicated that 66% of North Carolina High School principalsexercise at least three times a week. This was surprising due to Blair's[1] findings that the majority of Americans lead sedentary lifestyles. There was a substantial difference between the fitness/physical activity of the "Fit Leaders" and the "Unfit Leaders". Table 11 provides data related to the question.

Table 11

Fitness Analysis

Category	Number	%
"Fit Leaders" (exercised 7.72 times per week)	18	15
"Unfit Leaders" (exercised .11 times per week)	18	15
Exercise at least 3 times per week	81	66
Did no exercise at all	26	21
Did any strength training at all	40	33

[1]Blair, op. cit, page 2400.

Research Question Two

The second research question dealt with whether or not physically fit principals are rated as more effective leaders than principals who are not as physically fit. Fit principals (Q1) were compared to unfit principals (Q4) based on their superintendents evaluation of their leadership effectiveness. The results of a T-test and an ANOVA indicated a statistically significant difference between the rated leadership effectiveness of principals who are physically fit and those who are not physically fit. The answer to the second research question would seem to be yes, which supports the research hypothesis that physically fit principals are rated as more effective leaders than principals who are not as physically fit.

Conclusions and Discussions

The conclusion from the research seems to be that there is a relationship between physical fitness and effective leadership. This conclusion is consistent with current literature about physical fitness. Human beings operating at their highest level phyically, intellectually, and emotionally are what the demands of leadership require. A person needs to be literally "humming" at the maximum level to be an effective leader. According to Sergiovanni, to be

characterized as a leader is, implicitly, to be complemented, and the reverse is also true.[2]

A leader must be a good "coach", who can coach, counsel, and confront, says Peters.[3] Here are some comments about good "coaches" from Peters' seminars; "sets a good example"; "is firm but fair"; "lets me know where I stand"; "works harder than anyone else"; "inspires loyalty"; "is enthusiastic"; "has a sense of humor"; "is courageous"; "is optimistic"; "operates well under pressure"; "operates at a level above that expected"; and "enjoys his or her job".[4]

Townsend says that a leader is tough, confronts nasty problems, persistent, a cheerleader, gives honest feedback, knows how to fire people, honest under pressure, consistent, and credible.[5] A person who is physically fit would more likely to have these traits in abundance than a person who is not fit.

Cooper lists these benefits of physical fitness that would surely benefit a leader, or principal:

-- more personal energy

-- greater ability to handle job-related stress

-- less depression

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[2]Thomas Sergiovanni, The New School Executive, Harper's Row, New York, NY, 1980, page 265.

[3]Peters. op. cit., page 422.

[4]Ibid.

[5]Ibid, page 420-421.

-- less free-floating anxiety

-- a better self-image

-- more self-confidence

-- slowing of the aging process

-- more restful sleep[6]

A high school principal with these benefits would certainly be more effective in his/her day-to-day tasks. Cooper talks of people who have begun to run, swim, or otherwise engage in endurance activities for thirty minutes at a time are rediscovering certain primordial principles of perserverance that help them overcome lack of concentration or discipline on their job--a real problem for many people.

They are not only increasing the power of their bodies, but are also tapping broader physical and psychological resources that spill over into their other pursuits as well. People who have become aerobically fit are able to stick with a project at work that requires a few extra hours of effort to acheive excellence easier than before they became fit.[7]

Cooper goes on to say that, as people achieve their physical goals, they are also more ready to believe that they can acheive success in their careers as well. He says

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[6]Kenneth Cooper, The Aerobic Program for Total Well-Being, Bantam Books, New York, NY 1982, page 18.

[7]Kenneth Cooper, The Aerobic Program for Total Well-Being, Bantum Books, New York, NY, 1982, page 18.

that fitness and total well-being will undoubtedly enrich a career, especially as an individual becomes more involved in these endeavors and as the time and energy demands they place on a person become greater. Cooper says that physical fitness, proper diet, and rest can transform an individual from a state of inner disruption and imbalance into a condition of overall equilibrium and well-being.[8] One must avoid the sedentary lifestyle and the steady erosion of physical, intellectual, and emotional powers it brings.[9]

Sheehan gives this testimony to physical fitness:

> "Fitness does indeed give us those qualities necessary for leading the good life. We acquire zest and vitality to face the day and its tasks with confidence and enthusiam. We also produce creative energy, which enable us to be free and spontaneous in problem solving. Fitness opens up the circuits in the amazing storage-and-retrieval system that is our brain. The effect of fitness on the quality of life is unquestionable. The fit person develops those qualities that are fundamental to proper existence. Fitness gives us the qualities to make responses and to perform acts in accordance with our highest nature. The case for the quality of life seems to be unshaken. Fitness makes a person a good animal--an animal at home in the environment."[10]

He goes on the comment on the inactivity of most people and its effect on the aging process.

> "Most people live nowhere near their limits. They settle for an accelerated aging, an early and precipitous fall. They give aging a bad name. Too many people entering their forties are performing at

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[8] Ibid.

[9] Cooper, page 108.

[10] George H. Sheehan, Dr. Sheehan on Fitness, Simon & Shuster, Inc., New York, 1983, page 11.

physiological levels more appropriate to somebody sixty years old."[11]

Miller seems to have summarized the conclusions of the study very well. He suggests that most of an executive's work is mental and that as an executive one spends a great deal of time in a sitting position. The responsibility one has, for the most part, requires the use of the brain, not the body. Too much high-level mental activity without at least some physical activity results in an unhealthy imbalance that causes fatigue. A sedentary lifestyle deconditions the body in such a way that you are functioning at only half your normal energy level, according to Miller.[12]

He says that his "Stamina Fitness Plan" is necessary for an executive to function at top potential. The plan calls for the executive to take a brisk 30-minute walk four days a week and participate in a weight training program using light dumbells three days a week. Miller lists four reasons why executives need his fitness plan:

1. The stamina fitness plan will give you a reserve of energy and stamina
2. The stamina plan will make you more creative and enable you to make better decisions.

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[11] Ibid.

[12] Peter M. Miller, The Hilton Head Executive Stamina Program, Warner Books, 1986, page 100.

3. The plan will even out your moods and help you overcome stress. (These are two of the most important benefits of the plan)
4. The plan will lower your risk factors associated with cardiovascular disease.[13]

He emphasizes the importance of the strengthening, or dumbell exercises, to achieve total stamina. Otherwise, one's upper body muscles will tire easily from inactivity, since walking only conditions the lower body.[14]

Therefore, the research findings are consistent with the literature about fitness and leadership. That physically fit principals are more effective leaders than principals who are not physically fit would not surprise anyone in the fitness field and probably few in the field of leadership.

Another conclusion is that principals are more fitness-conscious than the general public. This was somewhat of a surprise, since principals appear to be representative of the general population. However, the findings of this research indicated that nearly two-thirds of sample principals exercised at least three times a week. According to Blair, not even one-third of the average population exercises that frequently.

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[13]Ibid, page 122.

[14]Sheehan, op. cit., page 131.

A third conclusion is that principals are not educated as to the benefits of strength training, or weight training. Only 33% of the principals surveyed did any kind of strength training, whereas 66% of them exercised regularly. Aerobic exercise dominated the exercise habits of the principals.

Theoretical Implications

The research findings have implications that are consistent with contemporary theories in leadership and exercise physiology. As previously cited in the paper, there are many parallels that occur between characteristics of good leaders and effects of exercise, especially aerobic exercise.

Robert Ritschel discusses the roll of the high school principal as a role that requires efficiency, problem analysis, judgment, decisiveness, leadership and stress tolerance.[15] Ray Killinger cited better concentration, mental tenacity, and ability to entertain and consider several ideas at once as some of the effects of aerobic fitness on the brain.[16] Spino indicates that reduction in anxiety and improved ability to relax and sleep are important benefits of aerobic exercise. He also mentions true physical fitness as a way to reduce or even prevent

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[15]Ritschel, ERIC, op cit.

[16]Cooper, The Aerobic Way, op cit., page 183.

stress.[17] Surely these benefits of exercise and fitness should help one be a better "conductor", or high school principal. A physically fit principal would seem to be able to handle the ambiguity between the desirable and the necessary, a requisite of a good leader, according to Bennis.[18]

Current leadership theory is that leadership is not an art or a "gift" just for the chosen few. To study about leadership now is to study a science, a body of knowledge, or certain traits that define a leader. Bryson, for example, lists seven traits desirable in a leader: vision, wisdom, courage, ability to deploy resources, energy, charisma, (which Bryson defines as the combination of the other six traits), and integrity. Several of these traits could be enhanced by physical fitness--vision, courage, energy, charisma, and possibly wisdom.[19] Sheehan suggests that higher education should consist of training both mind and body, one quite as vigorously as the other.[20] James said, "I hope that the ideal of the well-trained and vigorous body will be maintained neck and neck with that of the well-trained and vigorous mind as two co-equal halves in

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[17]Spino, op cit., page 71.

[18]Bennis, op cit., page 54.

[19]Joseph E. Bryson, Class lecture, UNC Greensboro, September 6, 1988.

[20]Sheehan, op cit., page 144.

the higher education for men and women."[21] Plato said that the body is the source of all energy and initiative.[22] Sheehan sums up the whole thesis of this paper when he says:

> "The trained body gives us the maximum available energy, provides us with the most powerful initiative. Why place ourselves at a disadvantage? Are we going to get the most out of the person we are--or aren't we?"[23]

Leaders must be physically fit to live and function at their own individual highest level. To not strive for maximum performance would be to defect, or to do as James says, "We lead lives inferior to ourselves."[24]

Therefore, if leadership is a science to be learned and a skill that can be improved, as James implied when he said that one can change his temperament if he acts the way he wants to be; or if one continues acting like a leader, one will eventually become a leader;[25] then physical fitness should certainly be a part of the curriculum. Striving to be physically fit through a regular exercise program would be a vital part of one's development as a leader. Leaders must learn to take care of their bodies as well as their minds. The research findings are consistent with current thinking on physical fitness and leadership.

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[21] Ibid.

[22] Ibid.

[23] Ibid.

[24] Ibid.

[25] Bryson, op cit.

Practical Implications

Two practical implications of these research findings appear obvious. The first practical implication is for school administrator preparation programs at the university. A personal fitness program should be included in all principal preparation programs, using Cooper's works as the basis for instruction. Prospective principals should be made aware that there is a way to survive and even feel good doing it. It is a shame that such an effective way to be at one's best and manage the crushing stresses of a high school principal are hardly mentioned in the preparation program. Strength training should be included in the curriculum in much the same way as in the study, as a supplement to the aerobic program. Principal preparation programs, as well as all executive training programs, should consider carefully the advantages of such an addition to these training programs.

The second practical implication is closely related to the first one. The research findings indicate that principals already employed should educate themselves as to the benefits of exercise and fitness, start a program of their own, and encourage their faculty to do the same. The benefits available to the principal are also available to the faculty. Teachers who are physically fit should be better teachers, with the same reasons applying--feel better, look better, think clearer, handle stress better,

etc. The principal should be inspirational to his faculty in setting the tone for a physically fit faculty, as well as keeping in shape herself/himself.

Another practical implication, considering that principals appear to be largely uninformed about the benefits of weight training, is that principals should be educated about strength training and its effects. A strong, fit principal should be better able to perform the physical tasks in her/his life.

Recommendations for Further Research

1. It is recommended that further research be conducted to to study the effects of exercise on stress management of school principals and superintendents. School administration should incorporate stress management through a physical fitness program into the curriculum.
2. It is recommended that further research be conducted to study the effects of exercise on the attitude of school of school administrators. Specifically, the research would investigate whether school administrators who exercise have a more positive attitude about their job than ones who do not. This would be interesting, since one of the major advantages of being physically fit is maintaining a positive attitude about life, a kind of "joie de vivre".
3. Further research into the psychological benefits of strength training, specifically weight training-- barbells, Universal Machines, and Nautilus Machines-- is recommended. It is the opinion of the researcher that school principals are overlooking something that can contribute to the quality of their lives. Research dealing with the effects of strength training on stress management and attitude is recommeded.

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APPENDIX A

LETTER TO PRINCIPALS

THOMASVILLE HIGH SCHOOL

DANIEL A. COCKMAN
Principal

MIKE ALLRED
JAMES CARMICHAEL
Assistant Principals

410 UNITY STREET
THOMASVILLE, N.C. 27360

Dear Principal:

I am asking for your assistance in completing my doctoral research at UNC-Greensboro. I am attempting to find out if there is a relationship between the physical fitness and leadership effectiveness of the high school principals in North Carolina. You can help me in two ways.

1) by filling out and returning the fitness questionnaire to me via the enclosed envelope as soon as possible.

2) by granting permission for me to ask your superintendent to evaluate you on the 12 generic areas of leadership defined by the NASSP as being most predictive of success in the school principalship. (Please check below)

Your prompt participation is crucial to my study. I would appreciate this very much -- I believe the study will have important implications for principal and executive training programs. Please call if you have a question.

Work: 919/475-2156
Home: 919/476-6436

Sincerely,

Mike Allred

Mike Allred

_____ Yes, I do give permission for my superintendent to evaluate me on the NASSP's 12 areas of leadership. (Copy is enclosed)

_____ No, I do not give permission for my superintendent to evaluate me on the NASSP's 12 areas of leadership.

MA/ps

Enclosures

APPENDIX B

LETTERS TO SUPERINTENDENTS

THOMASVILLE HIGH SCHOOL

DANIEL A. COCKMAN
Principal

MIKE ALLRED
JAMES CARMICHAEL
Assistant Principals

410 UNITY STREET
THOMASVILLE, N.C. 27360

Dear Superintendent:

I am writing to request that you assist me in my research for my doctoral dissertation. I am trying to determine if there is a relationship between physical fitness and leadership effectiveness of high school principals. I have already gathered the data about physical fitness; now I need data about leadership effectiveness. After considerable investigation, I have selected a rating scale using 12 generic leadership skills as identified by the NASSP as being most predictive of the success of a school. The principal(s) has/have given her/his/their permission for me to have you rate them in these areas. Your prompt participation is crucial to the success of my study. Please read the enclosed supporting letters. Call me if you have a question at these numbers.

Work: 919/475-2156

Home: 919/476-6436

Sincerely,

Mike Allred

Mike Allred

MA/ds

Enclosure(s)

THE UNIVERSITY OF NORTH CAROLINA
AT GREENSBORO

School of Education

December 6, 1989

Dear Superintendent:

I am writing to request your support for the research described in the attached materials from Mr. Mike Allred. This research constitutes his doctoral dissertation.

Mr. Allred has identified a possible significant relationship between physical fitness and a principal's ability to operate an effective school. As part of his research design he must identify effective principals. In order to do this he must rely on your willingness to identify those principals in your system you consider the most effective.

I know that your schedule is hectic but I hope you will take a few minutes to provide Mr. Allred the information he requests.

The reason that I am writing this letter in December is that I will be on a Fulbright assignment in the Soviet Union during January-June, 1990, the time period Mr. Allred projects for his data collection.

Sincerely yours,

David H. Reilly

David H. Reilly

APPENDIX C

INSTRUMENTS

PHYSICAL FITNESS EVALUATION INSTRUMENT

(Please answer both questions)

1. How many times a week do you participate vigorously in aerobic activity (running, brisk walking, biking, swimming, _____) for at least twenty minutes?

0 ____ 1 ____ 2 ____ 3 ____ 4 ____ 5 ____ 6 ____ 7 ____

2. How many times a week do you participate vigorously in calisthentics (push-ups, pull-ups, sit-ups) or weight training (barbells, Universal Machine, Nautilus Machine) for at least fifteen minutes?

0 ____ 1 ____ 2 ____ 3 ____ 4 ____ 5 ____ 6 ____ 7 ____

PRINCIPAL EVALUATION

NAME:_____

The principal is rated on each of the following areas:

1. Problem analysis:

   -defines problem, gets facts from everyone involved to get overview of problem.

   _____Always
   _____Frequently
   _____Sometimes
   _____Seldom
   _____Never

2. Judgment:

   -fair and professional judgment permeates all decisions.

   _____Always
   _____Frequently
   _____Sometimes
   _____Seldom
   _____Never

3. Organizational Ability:

   -organizes school for the maximum effectiveness.

   _____Always
   _____Frequently
   _____Sometimes
   _____Seldom
   _____Never

4. Decisiveness:

   -collects facts, seeks input and has courage to make the decision.

   _____Always
   _____Frequently
   _____Sometimes
   _____Seldom
   _____Never

5. Leadership:

   -inspires and motivates students and staff to achieve at highest level.

   _____Always
   _____Frequently
   _____Sometimes
   _____Seldom
   _____Never

6. Sensitivity:

   -is sensitive to needs of students, staff, and community.

   _____Always
   _____Frequently
   _____Sometimes
   _____Seldom
   _____Never

7. Stress Tolerance:

   -is able to funcion effectively as leader despite stresses and ambiguities of job.

   _____Always
   _____Frequently
   _____Sometimes
   _____Seldom
   _____Never

8. Oral Communication:

-can orally communicate effectively formally and informally with large and small groups.

_____Always
_____Frequently
_____Sometimes
_____Seldom
_____Never

9. Written Communication:

-writes effective memos, letters, and other forms of communication.

_____Always
_____Frequently
_____Sometimes
_____Seldom
_____Never

10. Range of Interests:

-is well-rounded both personally and professionally.

_____Always
_____Frequently
_____Sometimes
_____Seldom
_____Never

11. Personal Motivation

-is visibly motivated to be the best he can be as a person and an educator.

_____Always
_____Frequently
_____Sometimes
_____Seldom
_____Never

12. Educational Values:

-has professional value system that puts high priority on instruction and learning.

_____Always
_____Frequently
_____Sometimes
_____Seldom
_____Never